

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed March 24, 2004.

In the Office Action dated October 6, 2003, the Examiner objected to Claims 4-7, 9, 12-16, 20-24, and 28-32, indicating that these Claims would be allowable if rewritten in independent form and to overcome any §112 rejections or objections. Relying on the Examiner's indication, Applicants canceled and amended various claims to put this case in condition for allowance. Applicants did not cancel or amend any claims to overcome the Examiner's original rejections based upon cited references. Applicants' amendments were made to expedite issuance of allowable claims while reserving Applicants' rights to pursue rejected claims in continuation applications.

However, in the Office Action dated March 24, 2004, the Examiner rejects claims previously indicated to be allowable. Because the Examiner now rejects claims previously indicated to be allowable, Applicants have decided to restore the claims that were previously amended or canceled to their original form. Thus, Applicants amend Claims 1, 10, 18, and 26 to remove elements previously added from originally-filed Claims 6, 12, 20, and 28. Applicants also add new Claims 34-37, which are identical in substance to originally-filed Claims 6, 12, 20, and 28. Claims 4, 5, 7, 9, 13-16, 21-24, and 29-32, which were amended in the previous response in accordance with the Examiner's indications to put these claims in independent form, remain in independent form, having identical scope to the originally filed claims.

Applicants respectfully request reconsideration and favorable action in this case.

Allowable Subject Matter

Applicants note with appreciation the Examiner's allowance of Claim 9. Applicants do not amend this Claim. Therefore, Claim 9 remains in condition for allowance in accordance with the Examiner's indications.

Claim Rejections – 35 U.S.C. §103

The Examiner rejects Claims 1-5, 7, 8, 10, 11, 13-19, 21-27, and 29-33 under 35 U.S.C. §103(a) as being unpatentable over various combinations of references. To establish

obviousness of a claimed invention under §103, all claim limitations must be taught or suggested by the prior art. M.P.E.P. §2143.03. In addition, the Examiner must show some teaching, suggestion, or motivation to combine or modify the references either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. M.P.E.P. §2143.01. Using the inventors' disclosure as a blueprint for piecing together references without showing evidence of a suggestion, teaching, or motivation to combine the references is the essence of improper hindsight analysis.¹

Claims 1-4, 10, 11, 15, 18, 19, 21, 23, 26, 27, 29, and 31

The Examiner rejects Claims 1-4, 10, 11, 15, 18, 19, 21, 23, 26, 27, 29, and 31 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,292,515, which issued to Kao, et al. ("Kao"), in view of U.S. Patent No. 6,583,662, which issued to Lim ("Lim").

Applicants' independent Claim 1, as amended, recites:

A digital subscriber line (xDSL) communications device comprising:
a digital engine operable to assign bits of data for transmission in an allocated bandwidth;
a line driver operable to provide power across an effective power spectrum for transmitting the bits of data;
a memory storing provisioned parameters for an xDSL link; and
a controller operable to:
determine trained parameters of the xDSL link,
wherein the trained parameters comprise an available bandwidth;

¹ In *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999), the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that evidence of a suggestion, teaching, or motivation to combine is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

Id. at 999 (emphasis added) (citations omitted).

allocate a portion of the available bandwidth as
the allocated bandwidth based on the provisioned parameters;
and
adjust the effective power spectrum to
correspond with the allocated bandwidth.

Applicants respectfully submit that *Kao* and *Lim*, whether taken alone or in combination, fail to teach or suggest every element of this Claim.

Among other aspects of Claim 1, the *Kao-Lim* combination fails to teach or suggest “a controller operable to . . . adjust the effective power spectrum to correspond with the allocated bandwidth.” As teaching this element, the Examiner cites both *Kao* and *Lim*. The Examiner first cites discussion in *Kao* regarding disabling sub-channels. *Kao*, Col. 13, lines 19-29. The Examiner then states that “the power spectrum is adjusted to correspond with the allocated bandwidth, since some of the subchannels are disabled.” *Office Action*, page 3. Applicants respectfully disagree. The disabling of sub-channels simply fails to teach or suggest “adjust[ing] the effective power spectrum to correspond with the allocated bandwidth.”

Next, the Examiner cites to *Lim*, which discloses using a continuous-time smoothing filter circuit to remove high-frequency spectral images and other content from a xDSL communications link in order to comply with applicable protocol standards regarding spectral energy masks. The Examiner begins by citing two figures in *Lim* showing frequency responses of low-order and high-order low pass filters. *Lim*, Figs. 7A and 7B; Col. 15, line 14-Col. 16, line 11. Then, the Examiner then cites discussion in *Lim* regarding calibration of filters. *Lim*, Col. 12, line 53-Col. 13, line 8. However, neither using low pass filters nor the calibration of those filters teaches or suggests “adjust[ing] the effective power spectrum to correspond with the allocated bandwidth.”

For at least these reasons, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of independent Claim 1 and its dependent Claims 2 and 3. For reasons analogous to those discussed above with regard to Claim 1, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of independent Claim 4.

Applicants’ independent Claim 10, as amended, recites:

A method for reducing power consumption on a digital
subscriber line (xDSL) link, comprising:
training the xDSL link;

determining trained parameters of the xDSL link,
wherein the trained parameters comprise an available
bandwidth;

determining provisioned parameters of the xDSL link;
allocating a portion of the available bandwidth for
xDSL communications based on the provisioned parameters;
and

adjusting analog characteristics of a line driver to
correspond with the allocated portion of the available
bandwidth.

Applicants respectfully submit that *Kao* and *Lim*, whether taken alone or in combination, fail to teach or suggest every element of this Claim.

Among other aspects of Claim 10, the *Kao-Lim* combination fails to teach or suggest “adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.” As teaching this element, the Examiner cites two figures in *Lim* showing frequency responses of low-order and high-order low pass filters. *Lim*, Figs. 7A and 7B; Col. 15, line 14-Col. 16, line 11. Then, the Examiner then cites discussion in *Lim* regarding calibration of filters. *Lim*, Col. 12, line 53-Col. 13, line 8. However, neither using low pass filters nor the calibration of those filters teaches or suggests “adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.”

For at least these reasons, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of independent Claim 10 and its dependent Claim 11. For reasons analogous to those discussed above with regard to Claim 10, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of independent Claims 15, 18, 21, 23, 26, 29, and 31, and Claims 19 and 27, which depend from Claims 18 and 26 respectively.

In addition, Applicants respectfully submit that there is no teaching, suggestion, or motivation to combine or modify *Kao* and *Lim* either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Furthermore, Applicants respectfully submit that the Examiner has improperly used the inventor’s disclosure as a blueprint for piecing together the references, the essence of hindsight reconstruction.

Claims 5, 14, 22, and 30

The Examiner rejects Claims 5, 14, 22, and 30 under 35 U.S.C. §103(a) as being unpatentable over *Kao* in view of *Lim* in further view of U.S. Patent No. 6,704,351, which issued to Ott, et al. ("*Ott*"). Regarding independent Claim 5, for reasons analogous to those discussed above with regard to Claim 1, Applicants respectfully submit that *Kao* and *Lim* fail to teach or suggest "a controller operable to . . . adjust the effective power spectrum to correspond with the allocated bandwidth." Regarding independent Claims 14, 22, and 30, for reasons analogous to those discussed above with regard to Claim 10, Applicants respectfully submit that *Kao* and *Lim* fail to teach or suggest "adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth." The introduction of *Ott* fails to teach or suggest the elements not shown by *Kao* and *Lim*. Thus, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of independent Claims 5, 14, 22, and 30.

In addition, Applicants respectfully submit that there is no teaching, suggestion, or motivation to combine or modify *Kao*, *Lim*, and *Ott* either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Furthermore, Applicants respectfully submit that the Examiner has improperly used the inventor's disclosure as a blueprint for piecing together the references, the essence of hindsight reconstruction.

Claims 7, 13, 16, 24, and 32

The Examiner rejects Claims 7, 13, 16, 24, and 32 under 35 U.S.C. §103(a) as being unpatentable over *Kao* in view U.S. Patent No. 6,226,322, which issued to Mukherjee ("*Mukherjee*").

Applicants' independent Claim 7, as amended, recites:

A digital subscriber line (xDSL) communications device comprising:

a digital engine operable to assign bits of data for transmission in an allocated bandwidth;

a line driver operable to provide power across an effective power spectrum for transmitting the bits of data, wherein the line driver comprises an amplifier having a feedback loop with a variable complex impedance;

a memory storing provisioned parameters for an xDSL link; and

a controller operable to:

determine trained parameters of the xDSL link,
wherein the trained parameters comprise an available
bandwidth;

allocate a portion of the available bandwidth as
the allocated bandwidth based on the provisioned parameters;
and

adjust the effective power spectrum to
correspond with the allocated bandwidth by adjusting a real and
an imaginary portion of the variable complex impedance.

Applicants respectfully submit that *Kao* and *Mukherjee*, whether taken alone or in combination, fail to teach or suggest every element of this Claim.

Among other aspects of Claim 7, the *Kao-Mukherjee* combination fails to teach or suggest “a controller operable to . . . adjust the effective power spectrum to correspond with the allocated bandwidth by adjusting a real and an imaginary portion of the variable complex impedance.” As teaching this element, the Examiner cites both *Kao* and *Mukherjee*. The Examiner first cites discussion in *Kao* regarding disabling sub-channels. *Kao*, Col. 13, lines 19-29. The Examiner then states that “the power spectrum is adjusted to correspond with the allocated bandwidth, since some of the subchannels are disabled.” *Office Action*, page 3. Applicants respectfully disagree. The disabling of sub-channels simply fails to teach or suggest “adjust[ing] the effective power spectrum to correspond with the allocated bandwidth by adjusting a real and an imaginary portion of the variable complex impedance.”

Next, the Examiner cites *Mukherjee*, which discloses an integrated circuit to compensate for high frequency line attenuation in DSL communications. The Examiner points to discussion in *Mukherjee* regarding construction of an equalizer. *Mukherjee*, Col. 26, line 59-Col. 27, line 50. However, using an equalizer to compensate for high frequency line attenuation fails to teach or suggest “adjust[ing] the effective power spectrum to correspond with the allocated bandwidth by adjusting a real and an imaginary portion of the variable complex impedance.”

For at least these reasons, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of independent Claim 7. For reasons analogous to those discussed above with regard to Claim 7, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of independent Claims 16, 24, and 32.

Regarding independent Claim 13, for reasons analogous to those discussed above with regard to Claim 10, Applicants respectfully submit that *Kao* fails to teach or suggest

“adjusting analog characteristics of a line driver to correspond with the allocated portion of the available bandwidth.” The introduction of *Mukherjee* fails to teach or suggest the element not shown by *Kao*. Thus, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of independent Claim 13.

In addition, Applicants respectfully submit that there is no teaching, suggestion, or motivation to combine or modify *Kao* and *Mukherjee* either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Furthermore, Applicants respectfully submit that the Examiner has improperly used the inventor’s disclosure as a blueprint for piecing together the references, the essence of hindsight reconstruction.

Claims 8, 17, 25, and 33

The Examiner rejects Claims 8, 17, 25, and 33 under 35 U.S.C. §103(a) as being unpatentable over *Kao* in view of *Lim* and further in view U.S. Patent No. 6,370,187, which issued to Agah (“*Agah*”). Each of these claims depends from an independent Claim shown above to be allowable over *Kao* in view of *Lim*. The introduction of *Agah* fails to teach or suggest the elements of Applicants’ independent claims not shown by *Kao* and *Lim*. Thus, for at least these reasons, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of Claims 8, 17, 25, and 33.

In addition, Applicants respectfully submit that there is no teaching, suggestion, or motivation to combine or modify *Kao*, *Lim*, and *Agah* either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Furthermore, Applicants respectfully submit that the Examiner has improperly used the inventor’s disclosure as a blueprint for piecing together the references, the essence of hindsight reconstruction.

CONCLUSION

Applicants have made an earnest attempt to place the Application in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending claims. If the Examiner feels that a telephone conference or an interview would advance prosecution of the Application in any manner, the undersigned attorney for Applicants stands ready to conduct such a conference at the convenience of the Examiner.

Although no fees are believed to be currently due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

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